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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,607

11/17/2005

Giovanni Gilardi

AVAN/000835US

5231

47389 7590 12/17/2007
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HOUSTON, TX 77056

EXAMINER

HUGHES, JAMES P

ART UNIT

PAPER NUMBER

2883

MAIL DATE

DELIVERY MODE

12/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/527,607	Applicant(s) GILARDI ET AL.	
	Examiner James P. Hughes	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 11-19 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Newly submitted claims 11-19 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons. This application contains claims directed to the following patentably distinct species:

Species A, represented by claims 1-10, drawn to a an optical modulator comprising; a Z-cut lithium niobate substrate, a first ground electrode, a second ground electrode, and a hot electrode disposed on the buffer layer; the first ground electrode having a width approximately equal to the width of the respective waveguide, characterized by an asymmetrical electrode structure in which, the hot electrode and the first ground electrode have a width substantially less than that of the second ground electrode.

Species B, represented by claims 11 and 12, drawn to a an optical modulator comprising; a Z-cut lithium niobate substrate, a first ground electrode, a second ground electrode, and a hot electrode disposed on the buffer layer; the spacing between the first ground electrode and the hot electrode is different from the spacing between the second ground electrode and the hot electrode;

Species C, represented by claims 13-19, drawn to a an optical modulator comprising; a Z-cut lithium niobate substrate, a first ground electrode, a second ground electrode, and a hot electrode disposed on the buffer layer; the hot electrode and the first ground electrode each have a width substantially less than that of the second ground electrode and wherein the spacing between the

first ground electrode and the hot electrode is different from the spacing between the second ground electrode and the hot electrode;

The species are independent or distinct because claims to the different species recite the mutually exclusive characteristics of such species. In addition, these species are not obvious variants of each other based on the current record.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, there is no generic claim.

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 11-19 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Arguments

Applicant's arguments, see pages 6-8 of the amendment, filed on October 2, 2007, with respect to the rejections of claims 1-10 have been fully considered and are persuasive. The rejections are withdrawn. Applicant persuasively argues that the prior art does not read on the amended claims. Applicant argues that the prior art does not teach, or fairly suggest, a ground electrode with a width approximately equal to the width of the waveguide therebelow in combination with the other amended recitations in the claim.

Allowable Subject Matter

Claims 1-10 are allowable. The following is a statement of reasons for the indication of allowable subject matter. Independent claim 1 is allowed because the prior art of record fails to teach or fairly suggest an optical modulator, or means for, comprising; a Z-cut lithium niobate substrate, a first ground electrode, a second ground electrode, and a hot electrode disposed on the buffer layer; the first ground electrode having a width approximately equal to the width of the respective waveguide, characterized by an asymmetrical electrode structure in which, the hot electrode and the first ground electrode have a width substantially less than that of the second ground electrode; in combination with the other claimed recitations. Claims 2-10 are allowed by virtue of their dependence on claim 1.

Conclusion

This application is in condition for allowance except for the following formal matters:
Claims 11-19 are withdrawn and not canceled.

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Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).


A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James P. Hughes whose telephone number is 571-272-2474. The examiner can normally be reached on Monday - Friday 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James P. Hughes
Patent Examiner
Art Unit 2883



Frank G. Font
Supervisory Patent Examiner
Technology Center 2800

JH
ENTER
11-30-02

Att. Dkt. No. AVAN/000835
U.S. Serial No.: 10/527,607
Filed: November 17, 2005
Inventor: Giovanni Gilardi, et al.
Title: Lithium Niobate Optical Modulator

Replacement Sheet 1

1/10

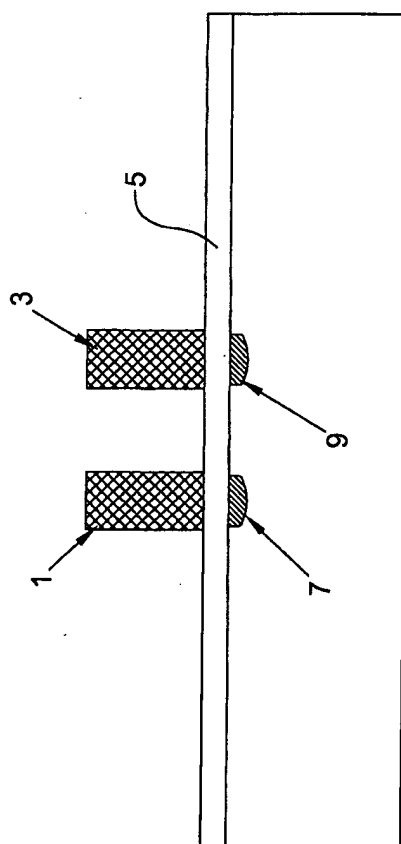


Fig. 1

Replacement Sheet 2

2/10

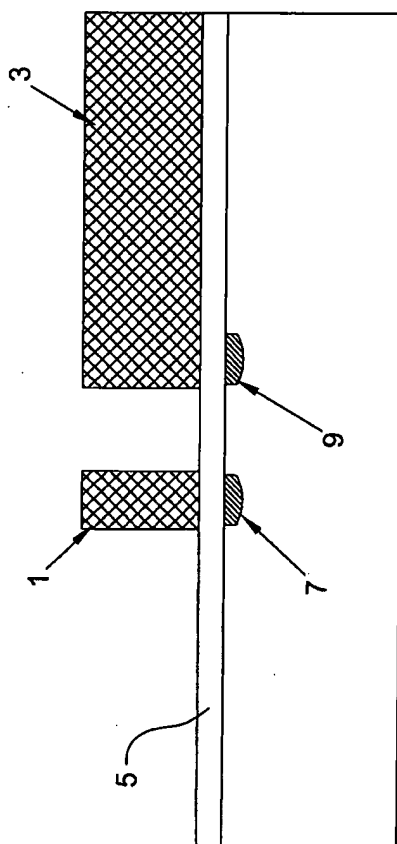


Fig. 2

Replacement Sheet 3

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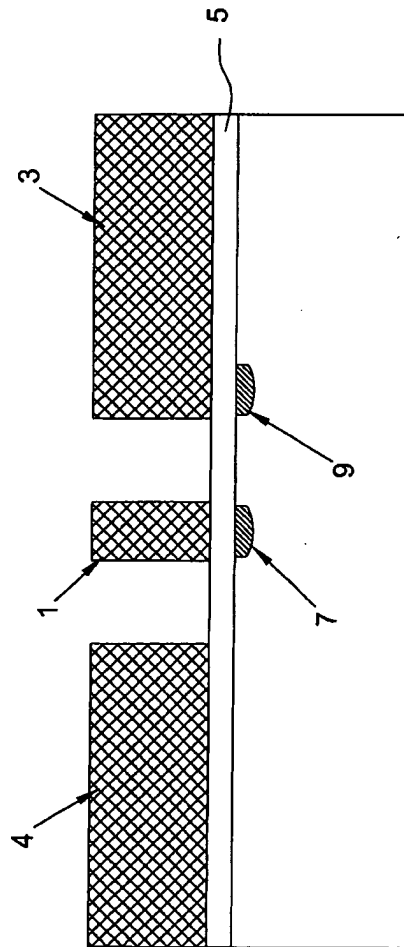


Fig. 3

Replacement Sheet 4

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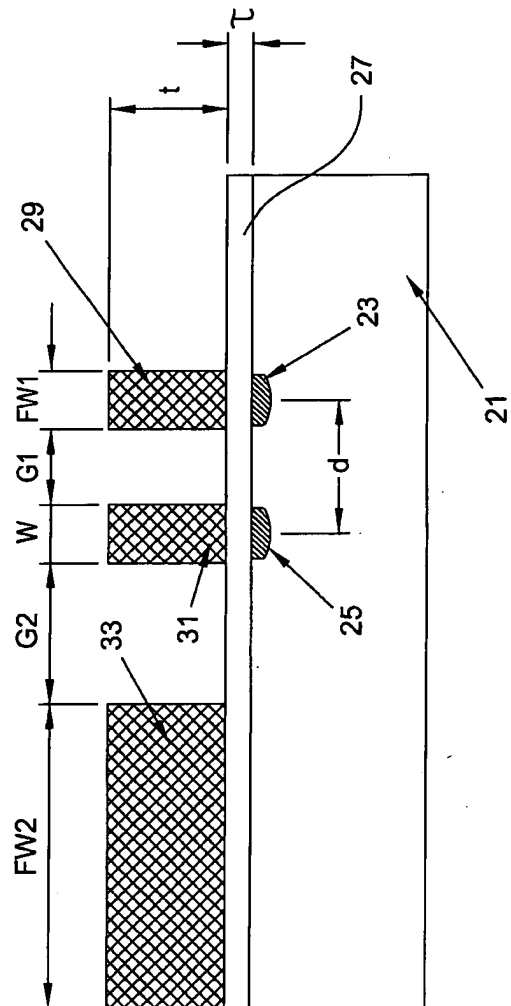


Fig. 4

Replacement Sheet 5

5/10

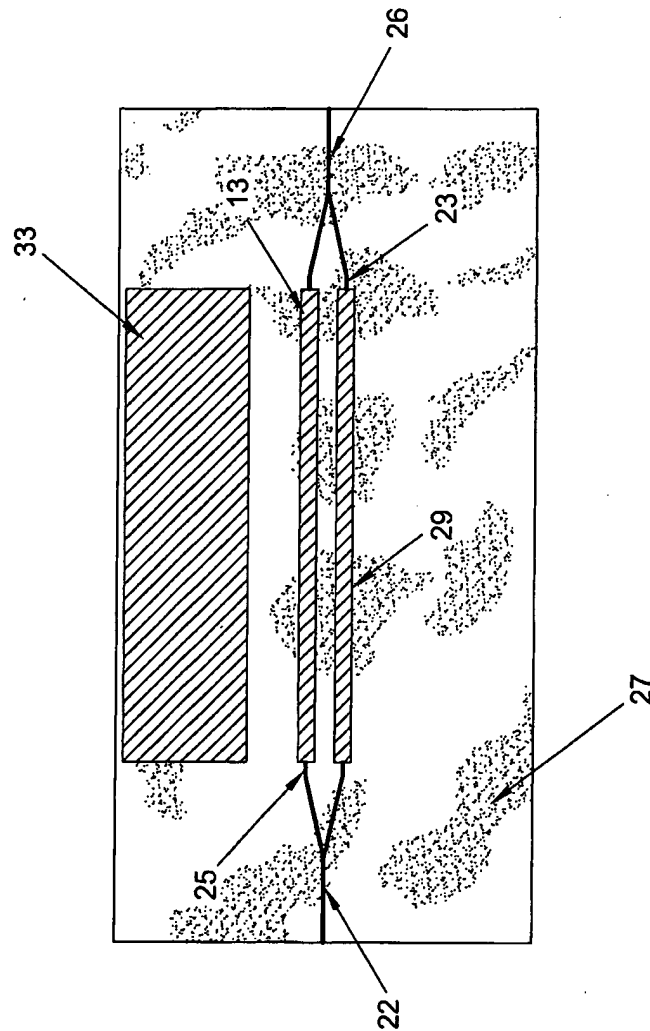


Fig. 5

Replacement Sheet 6

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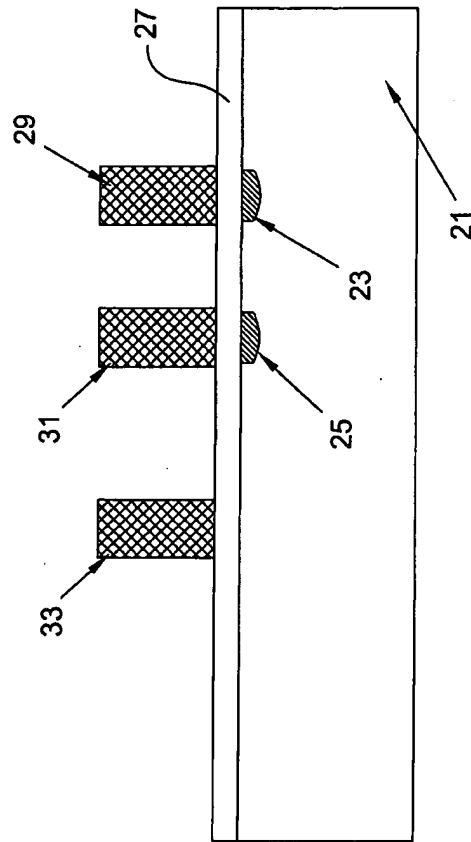


Fig. 6